Positive and negative numbers in context

6 questions | 13 marks

Equivalent correct methods earn the corresponding marks.

1. A submarine is 60 m below sea level. Write its height as a signed number. [2 marks]

Sea level is zero.

A position below it is negative.

Answer: −60 m

2. A platform is 8 m above ground level. Write its signed height. [2 marks]

Ground level is zero.

Above ground is positive.

Answer: +8 m

3. The morning temperature is −3°C and the afternoon temperature is +5°C. How much warmer is the afternoon? [2 marks]

From −3 to zero is 3 degrees.

From zero to +5 is 5 degrees.

The increase is 8 degrees.

Answer: 8°C warmer

4. An account has a debt of 25 dollars. A deposit of 10 dollars is made. Find the signed balance. [2 marks]

Represent the debt by -25.

$-25 + 10 = -15$.

Answer: -15 dollars

5. Ground floor is labelled 0. Basement B2 is two floors below it. Which integer labels B2? [2 marks]

Two floors below the zero reference is -2.

Answer: -2

6. A lift travels from floor -1 to floor 4. Write the signed change. [3 marks]

One floor upward reaches zero.

Four more upward floors reach 4.

The total change is $+5$.

Answer: $+5$ floors